

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of)	
)	
Amendment of Part 101 of the Commission's)	WT Docket 10-153
Rules to Facilitate the Use of Microwave for)	
Wireless Backhaul and Other Uses and to Provide)	
Additional Flexibility to Broadcast Auxiliary)	
Services and Operational Fixed Microwave)	
Licensees)	
 Request for Interpretation of Section 101.141(a)(3))	WT Docket 09-106
of the Commission's Rules Filed by Alcatel-)	
Lucent, Inc., et al)	
 Petition for Declaratory Ruling Filed by Wireless)	WT Docket 07-121
Strategies, Inc.)	
 Request for Temporary Waiver of Section)	RM-11417
101.141(a)(3) of the Commission's Rules Filed by)	
Fixed Wireless Communications Coalition)	

To: The Commission

San Mateo County operates an OC3 Sonet Loop Microwave System that supplies critical communication's for multiple Public Safety agencies. These agencies include local (law, fire, and EMS), as well as State and Federal public safety agencies. The system supports numerous voice, data, and primary radio applications that are key to Public safety throughout San Mateo County. We rely heavily on microwave communications facilities as it provides an extremely high level of reliability and security, and allows for access to remote radio locations. We have licensed critical infrastructure facilities in every Part 101 fixed point-to-point licensed band.

San Mateo County is extremely concerned that the introduction of thousands of quasi-licensed, unregulated "auxiliary stations" into the highly congested Part 101 point-to-point bands will lead to unnecessary and unpredictable harmful interference with our existing Public Safety Communications Network. Additionally, we are concerned that the incompatible overlay in services (point-to-multipoint vs. point-to-point) will lead licensees of this new technology to use minimally performing antennas that may not even meet FCC Category A and EIRPs far in excess of those necessary to provide reliable, quality service on the licensed point-to-point link.

The lower and upper 6 GHz, 10.5 GHz, 11 GHz, 18 GHz and 23 GHz bands are heavily congested in our area. In several instances, we were forced to use High Performance or

even Ultra-High Performance antennas in order to avoid interfering with or receiving interference from other licensed paths. The radiation patterns of these High Performance antennas are vastly superior to minimally performing plane parabolas. In fact, many of them provide as much as 30 dB more suppression than a just-qualifying Category A antenna. Without these antennas, several of our paths could never have been built and critical public safety communications would have been impaired as a result.

In the point-to-point services, the purpose of the licensed communications link is, as the name implies, to provide communications from one point to another. Thus, the FCC rules (Sections 101.103, 101.113, 101.115, 101.141, 101.147) were crafted to maximize the main beam power or EIRP and to minimize off-axis or sidelobe power or radiation. The “auxiliary station” concept is not solely concerned with main beam power or EIRP, and relies on the maximum EIRP or power in the off-axis or sidelobe regions in order to serve the multipoint receivers. Licensees of this concept would have no incentive to ever use a better performing antenna than an antenna just qualifying for FCC Category A, and they would attempt to license the maximum power level that they could get away with. And if a custom, non-commercially available antenna is used, there can be doubt whether the antenna in fact meets the Category A standard.

The County recently received two sets of Prior Coordination Notices (PCNs – attached as exhibit 1 and 2) from Wireless Applications Corp. (WAC) on behalf of OEM Communications, LLC. Even though no explanations were provided in the PCNs, it is obvious that OEM is intending to license both of these point-to-point paths to utilize this new “auxiliary station” concept. First, we must comment that this coordination is out of place and premature given the fact that the NPRM itself is in the preliminary stages and may be denied completely.

The PCNs all list an unprecedented 45 dBm transmitter power level which results in an EIRP of 84.7 dBm, or just barely below the maximum allowable power under 101.113. The predicted receive signal levels on these two short paths (4.7 miles & 5.6 miles) are -5.9 dBm and -8.4 dBm. The radio specification that WAC supplied lists the saturation level for error free operation at 64 QAM as -30 dBm. In response to our request for clarification on the power used and the antenna proposed, the county received an email (excerpted below) from Mr. Mike Mulcay on behalf of OEM.

Question: The antenna pattern appears to follow the FCC Category A breakpoints and does not appear to be a “real” antenna. Please explain.

Answer: ANTENNA

OEM Comm's antenna OC-1100A is a Smart Adaptive Antenna System designed to closely fit FCC Rule 101.115 Standard A antenna requirements for the frequency band 10700MHz to 11700MHz. The published radiation pattern envelope includes measured data plus tolerances.

Question: Please explain the 84.7 dBm EIRP listed on the path data sheets?

Answer: POWER LEVELS

The EIRP used for prior coordination was 84.7dBm. However, OEM Comm will use the minimum amount of power necessary to carry out the communications desired. The operational EIRP at all angles around the licensed stations will be as stated in the licenses.

Neither of these “answers” provides sufficient technical detail or justification for such a high EIRP for paths less than 6 miles in length. The most recent PCN (exhibit 2) proposes “smart antennas” and they are stating that there will be “nulls” greater than 30 dB. Several of the antennas even “null” the main beam so it is obvious that the EIRP is not relevant to the proposed point-to-point path. This kind of radical departure in antenna performance and design should require the proponent to provide details of the antenna design and bona fide measurements from a recognized antenna test range certified by an independent third party.

In summary, we believe that the major contradiction between intended goals of point-to-point systems vs. point-to-multipoint systems has not been adequately addressed in the NPRM and will lead to large areas where new frequency division duplex (FDD) systems can no longer be coordinated. This concept had the laudable goal of re-using so-called “dark spectrum”, but we can only see that the concept has become a self fulfilling fantasy as the “dark spectrum” that is to be re-used is created by the introduction of a path with the unjustifiably high EIRP and a minimal performing antenna that would appear to not meet FCC Category A antenna performance standards. At a minimum, this concept will lead to escalating costs as new licensees are forced to use the high performance and ultra high performance "super Category A" antennas to coordinate around these high powered “hubs” with minimally performing antennas. One could hardly imagine a more damaging and ill-conceived concept than overlaying a point-to-multipoint service into the well-ordered, high quality, high density, congested but still interference free Part 101 bands. We urge the Commission to reject the inclusion of “auxiliary stations” in any of the Part 101 point-to-point bands.



Wireless Applications Corporation
111-108th Avenue NE, Suite 160
Bellevue, WA 98004
(425) 643-5000
(425) 649-5675 (fax)

October 15, 2010

RE: OEM Communications LLC
Campbell – Cupertino
11 GHz Digital Microwave Systems
Prior Coordination Notification/ New Paths
EXPEDITED RESPONSE REQUESTED
File No: CAOEMC2010-05

Dear Frequency Coordinator and/or Licensee:

In accordance with the rules and regulations of the FCC, part 101.103 (d) (1), we are enclosing a frequency coordination notice for your review. The radio frequency study of the above referenced system has been investigated and no interference problems were indicated.

Please update your database in accordance with the attached data sheets. Should your review of these data reflect any problems, please contact this office.

If no response is received by **October 30, 2010**, we will assume you consent with our findings.

Note: These microwave sites use a smart antenna grid array with customized radiation patterns. To model these antennas in your interference calculation software, please download and use the corresponding radiation pattern envelopes from the following URL
<http://www.wirelessapplications.com/files/729018944592926.asp>, password is "smartantenna". These patterns will also be attached for electronic PCN's.

Sincerely,

Eric Wills
Senior Engineer

Wireless Applications Corporation
111-108th Avenue NE, Suite 160
Bellevue, WA 98004
(425) 643-5000

File: CAOEMC2010-05

email: FCC@wacorp.net

PCN Date: 10/15/2010

New Path

Company: OEM Communications LLC

Site Name	Campbell001	Cupertino003
Location	1901 S. Bascom Ave, Campbell, CA 95008	20370 Town Centre Line, Cupertino, CA 95014
Call Sign	New Path	New Path
ASR Number		
Latitude (NAD83)	37° 17' 21.08" N	37° 19' 7.17" N
Longitude (NAD83)	121° 56' 6.65" W	122° 1' 48.72" W
Ground Elevation (ft/m-AMSL)	187.0/57.0	236.2/72.0
Azimuth	291.3	111.3
Path Length (miles/km)	5.6/9	5.6/9
TX Antenna Manufacturer	OEM Communications LLC	OEM Communications LLC
Antenna Type	OEM-OC-1100A_0001	OEM-OC-1100A_0004
FCC Designation		
Antenna Gain (dBi/Beamwidth)	39.6/2.2	39.6/2.2
Tilt Angle	-0.316	0.235
C/L (ft/m-AGL)	220.0/67.1	28.0/8.5
RX Antenna Manufacturer	SAME AS TRANSMITTER	
Antenna Type		
FCC Designation		
Antenna Gain (dBi/(Beamwidth)		
C/L (ft/m-AGL)		
Equipment Manufacturer	Exalt Communications Inc.	Exalt Communications Inc.
FCC Identifier	ExploreAir rc 11000T	ExploreAir rc 11000T
Emissions Designator	40M0D7W	40M0D7W
Modulation Rate	134200	134200
Modulation	DIGITAL-64QAM	DIGITAL-64QAM
Stability (%)	0.001	0.001
Transmit Power (dBm/Watts)	45.1/32.36 with PA	45.1/32.36 with PA
Fixed Losses (Cm/Tx/Rx)(dB)	0/0/0	0/0/0
Coordinated EIRP (dBm/Watts)	84.7/295,120.9	84.7/295,120.9
Free Space Loss (dB)	132.3	132.7
Receive Level (dBm)	-8.4	-8.0
Frequencies Transmitted (MHz)	11,175.0000 H	11,665.0000 H



Wireless Applications Corporation
111-108th Avenue NE, Suite 160
Bellevue, WA 98004
(425) 643-5000
(425) 649-5675 (fax)

October 15, 2010

RE: OEM Communications LLC
Campbell – Cupertino
11 GHz Digital Microwave Systems
Prior Coordination Notification/ New Paths
EXPEDITED RESPONSE REQUESTED
File No: CAOEMC2010-06

Dear Frequency Coordinator and/or Licensee:

In accordance with the rules and regulations of the FCC, part 101.103 (d) (1), we are enclosing a frequency coordination notice for your review. The radio frequency study of the above referenced system has been investigated and no interference problems were indicated.

Please update your database in accordance with the attached data sheets. Should your review of these data reflect any problems, please contact this office.

If no response is received by **October 30, 2010**, we will assume you consent with our findings.

Note: These microwave sites use a smart antenna grid array with customized radiation patterns. To model these antennas in your interference calculation software, please download and use the corresponding radiation pattern envelopes from the following URL
<http://www.wirelessapplications.com/files/729018944592926.asp>, password is "smartantenna". These patterns will also be attached for electronic PCN's.

Sincerely,

Eric Wills
Senior Engineer

Wireless Applications Corporation
111-108th Avenue NE, Suite 160
Bellevue, WA 98004
(425) 643-5000

File: CAOEMC2010-06

email: FCC@wacorp.net

PCN Date: 10/15/2010

New Path

Company: OEM Communications LLC

Site Name	Campbell001	Cupertino003
Location	1901 S. Bascom Ave, Campbell, CA 95008	20370 Town Centre Line, Cupertino, CA 95014
Call Sign	New Path	New Path
ASR Number		
Latitude (NAD83)	37° 17' 21.08" N	37° 19' 7.17" N
Longitude (NAD83)	121° 56' 6.65" W	122° 1' 48.72" W
Ground Elevation (ft/m-AMSL)	187.0/57.0	236.2/72.0
Azimuth	291.3	111.3
Path Length (miles/km)	5.6/9	5.6/9
TX Antenna Manufacturer	OEM Communications LLC	OEM Communications LLC
Antenna Type	OEM-OC-1100A_0002	OEM-OC-1100A_0003
FCC Designation		
Antenna Gain (dBi/Beamwidth)	39.6/2.2	39.6/2.2
Tilt Angle	-0.316	0.235
C/L (ft/m-AGL)	220.0/67.1	28.0/8.5
RX Antenna Manufacturer	SAME AS TRANSMITTER	
Antenna Type		
FCC Designation		
Antenna Gain (dBi/(Beamwidth)		
C/L (ft/m-AGL)		
Equipment Manufacturer	Exalt Communications Inc.	Exalt Communications Inc.
FCC Identifier	ExploreAir rc 11000T	ExploreAir rc 11000T
Emissions Designator	40M0D7W	40M0D7W
Modulation Rate	134200	134200
Modulation	DIGITAL-64QAM	DIGITAL-64QAM
Stability (%)	0.001	0.001
Transmit Power (dBm/Watts)	45.1/32.36 with PA	45.1/32.36 with PA
Fixed Losses (Cm/Tx/Rx)(dB)	0/0/0	0/0/0
Coordinated EIRP (dBm/Watts)	84.7/295,120.9	84.7/295,120.9
Free Space Loss (dB)	132.3	132.7
Receive Level (dBm)	-8.4	-8.0
Frequencies Transmitted (MHz)	11,665.0000 H	11,175.0000 H



Wireless Applications Corporation
111-108th Avenue NE, Suite 160
Bellevue, WA 98004
(425) 643-5000
(425) 649-5675 (fax)

October 15, 2010

RE: OEM Communications LLC
Campbell – Blossom Hill
11 GHz Digital Microwave Systems
Prior Coordination Notification/ New Paths
EXPEDITED RESPONSE REQUESTED
File No: CAOEMC2010-08

Dear Frequency Coordinator and/or Licensee:

In accordance with the rules and regulations of the FCC, part 101.103 (d) (1), we are enclosing a frequency coordination notice for your review. The radio frequency study of the above referenced system has been investigated and no interference problems were indicated.

Please update your database in accordance with the attached data sheets. Should your review of these data reflect any problems, please contact this office.

If no response is received by **October 30, 2010**, we will assume you consent with our findings.

Note: These microwave sites use a smart antenna grid array with customized radiation patterns. To model these antennas in your interference calculation software, please download and use the corresponding radiation pattern envelopes from the following URL
<http://www.wirelessapplications.com/files/729018944592926.asp>, password is "smartantenna". These patterns will also be attached for electronic PCN's.

Sincerely,

Eric Wills
Senior Engineer

Wireless Applications Corporation
111-108th Avenue NE, Suite 160
Bellevue, WA 98004
(425) 643-5000

File: CAOEMC2010-08

email: FCC@wacorp.net

PCN Date: 10/15/2010

New Path

Company: OEM Communications LLC

Site Name	Campbell001	Blossom Hill002
Location	1901 S. Bascom Ave, Campbell, CA 95008	925 Blossom Hill Road, San Jose, CA 95123
Call Sign	New Path	New Path
ASR Number		
Latitude (NAD83)	37° 17' 21.08" N	37° 15' 6.31" N
Longitude (NAD83)	121° 56' 6.65" W	121° 51' 46.55" W
Ground Elevation (ft/m-AMSL)	187.0/57.0	187.0/57.0
Azimuth	123.06	303.08
Path Length (miles/km)	4.7/7.6	4.7/7.6
TX Antenna Manufacturer	OEM Communications LLC	OEM Communications LLC
Antenna Type	OEM-OC-1100A_0006	OEM-OC-1100A_0007
FCC Designation		
Antenna Gain (dBi/Beamwidth)	39.6/2.2	39.6/2.2
Tilt Angle	-0.400	0.331
C/L (ft/m-AGL)	220.0/67.1	60.0/18.3
RX Antenna Manufacturer	SAME AS TRANSMITTER	
Antenna Type		
FCC Designation		
Antenna Gain (dBi/(Beamwidth)		
C/L (ft/m-AGL)		
Equipment Manufacturer	Exalt Communications Inc.	Exalt Communications Inc.
FCC Identifier	ExploreAir rc 11000T	ExploreAir rc 11000T
Emissions Designator	40M0D7W	40M0D7W
Modulation Rate	134200	134200
Modulation	DIGITAL-64QAM	DIGITAL-64QAM
Stability (%)	0.001	0.001
Transmit Power (dBm/Watts)	45.1/32.36 with PA	45.1/32.36 with PA
Fixed Losses (Cm/Tx/Rx)(dB)	0/0/0	0/0/0
Coordinated EIRP (dBm/Watts)	84.7/295,120.9	84.7/295,120.9
Free Space Loss (dB)	131.1	131.5
Receive Level (dBm)	-6.8	-7.2
Frequencies Transmitted (MHz)	11,665.0000 H	11,175.0000 H



Wireless Applications Corporation
111-108th Avenue NE, Suite 160
Bellevue, WA 98004
(425) 643-5000
(425) 649-5675 (fax)

October 15, 2010

RE: OEM Communications LLC
Campbell – Blossom Hill
11 GHz Digital Microwave Systems
Prior Coordination Notification/ New Paths
EXPEDITED RESPONSE REQUESTED
File No: CAOEMC2010-07

Dear Frequency Coordinator and/or Licensee:

In accordance with the rules and regulations of the FCC, part 101.103 (d) (1), we are enclosing a frequency coordination notice for your review. The radio frequency study of the above referenced system has been investigated and no interference problems were indicated.

Please update your database in accordance with the attached data sheets. Should your review of these data reflect any problems, please contact this office.

If no response is received by **October 30, 2010**, we will assume you consent with our findings.

Note: These microwave sites use a smart antenna grid array with customized radiation patterns. To model these antennas in your interference calculation software, please download and use the corresponding radiation pattern envelopes from the following URL
<http://www.wirelessapplications.com/files/729018944592926.asp>, password is "smartantenna". These patterns will also be attached for electronic PCN's.

Sincerely,

Eric Wills
Senior Engineer

Wireless Applications Corporation
111-108th Avenue NE, Suite 160
Bellevue, WA 98004
(425) 643-5000

File: CAOEMC2010-07

email: FCC@wacorp.net

PCN Date: 10/15/2010

New Path

Company: OEM Communications LLC

Site Name	Campbell001	Blossom Hill002
Location	1901 S. Bascom Ave, Campbell, CA 95008	925 Blossom Hill Road, San Jose, CA 95123
Call Sign	New Path	New Path
ASR Number		
Latitude (NAD83)	37° 17' 21.08" N	37° 15' 6.31" N
Longitude (NAD83)	121° 56' 6.65" W	121° 51' 46.55" W
Ground Elevation (ft/m-AMSL)	187.0/57.0	187.0/57.0
Azimuth	123.06	303.08
Path Length (miles/km)	4.7/7.6	4.7/7.6
TX Antenna Manufacturer	OEM Communications LLC	OEM Communications LLC
Antenna Type	OEM-OC-1100A_0005	OEM-OC-1100A_0008
FCC Designation		
Antenna Gain (dBi/Beamwidth)	39.6/2.2	39.6/2.2
Tilt Angle	-0.400	0.331
C/L (ft/m-AGL)	220.0/67.1	60.0/18.3
RX Antenna Manufacturer	SAME AS TRANSMITTER	
Antenna Type		
FCC Designation		
Antenna Gain (dBi/(Beamwidth)		
C/L (ft/m-AGL)		
Equipment Manufacturer	Exalt Communications Inc.	Exalt Communications Inc.
FCC Identifier	ExploreAir rc 11000T	ExploreAir rc 11000T
Emissions Designator	40M0D7W	40M0D7W
Modulation Rate	134200	134200
Modulation	DIGITAL-64QAM	DIGITAL-64QAM
Stability (%)	0.001	0.001
Transmit Power (dBm/Watts)	45.1/32.36 with PA	45.1/32.36 with PA
Fixed Losses (Cm/Tx/Rx)(dB)	0/0/0	0/0/0
Coordinated EIRP (dBm/Watts)	84.7/295,120.9	84.7/295,120.9
Free Space Loss (dB)	131.1	131.5
Receive Level (dBm)	-6.8	-7.2
Frequencies Transmitted (MHz)	11,175.0000 H	11,665.0000 H